



The Effectiveness of ARCS-Based Interactive Multimedia in Improving Student Motivation in Social Studies Learning of Junior High Schools

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Abstract

Social Science learning in schools must be adapted to educational and technological updates. The use of digital learning media in social studies learning is expected to grow and increase students' enthusiasm for learning. This study aims to determine the effectiveness of ARCS-based interactive multimedia on learning motivation in social studies learning for class IX junior high school students. The study used a quasi-experimental method with a nonequivalent control group design. The data collection instrument used a learning motivation questionnaire with a population of all students in class IX and samples in classes IX-F and IX-G. The results of the prerequisite test showed that both groups were normally distributed and homogeneous. The results showed that the use of interactive multimedia there was a significant effect and was followed by an increase in students' learning motivation. This study concludes that multimedia is considered quite effective in influencing and increasing students' learning motivation.

Keywords: *Effectiveness; Interactive Multimedia; ARCS; Learning Motivation*

Introduction

Learning Social Sciences in Junior High School is an integrated science that covers various social science disciplines such as Geography, History, Economics, and Sociology. The purpose of studying these social sciences is to increase knowledge, understanding, and ability to analyze various social conditions in society. Social science learning must be adapted to the renewal of education and technology which is expected to obtain better learning outcomes. Nirmala (2020) stated that improving learning outcomes is very important to measure the achievement of learning objectives and mastery of competencies by students. This is following the statement by Kahfi et al., (2021) that learning outcomes are one indicator of the success of learning activities, when learning outcomes can be achieved well it can be said that the learning process is running effectively.

The success of learning activities is influenced by internal and external factors. The internal factors such as the physical condition of students, intelligence, attitudes, talents, interests, and motivations come from the students themselves. Alkaabi, Alkaabi & Vyver (2017: 194) states that the strongest intrinsic motivation is that someone does something because of a desire from within. According to Ainurrohmah dan Handayani (2020: 1322) learning motivation is needed so that students want to do something to achieve the results and learning objectives. Learning motivation has a crucial role in

learning success. Learning outcomes are better when there is a reason to learn. The more accurate student motivation will also increase the success rate of student learning (Andriani & Rasto, 2019: 82).

Learning motivation is one of the most important elements in learning. Learning motivation will be a driving force for students, leading to learning activities. Motivation is one of the determinants of learning success. According to opinion Fitriah (2018: 160) learning success and motivation influence each other. The existence of success will motivate students to succeed and create the next success.

External factors are factors that come from outside the students such as teaching methods, curriculum, school discipline, school environment, facilities and infrastructure, general condition of the family, learning media, and teaching materials (Puspitarini & Hanif, 2019: 56-57). Learning media is one of the factors that influence motivation and educational components that are useful for helping students understand the material. Media must be packaged in such a way that it can attract students' learning motivation. Improper application of media will cause low learning motivation. This can be seen from observations by researchers in the form of most teachers only using textbooks as learning media. So that students easily feel bored, do not pay attention to learning, do not have the spirit to compete with their friends, and easily feel satisfied with the results they get.

According to Harefa (2019: 153) and Puspitarini & Hanif (2019: 59) the media used must be effective, can foster interest, and arouse student learning motivation. Of course, with the development of technology and science, it is necessary to add media that can help teachers' efforts in generating student learning motivation. Nelawati & Saliman (2021: 103) in their research concluded that in the learning process teachers use media that have high effectiveness it will have an impact on student achievement. So, it can be said that the effectiveness of learning media can be seen from the learning outcomes obtained by students. But in addition to learning outcomes, the effectiveness of the media can also be seen from the feedback by students during the learning process.

Kahfi et al. (2021); Ghofur, Abd & Youhanita (2020); and Nugroho (2019) states that multimedia which contains various elements of text, images, video, audio, and animation has an attraction for students in obtaining their learning experiences which are following independent learning styles. Interactive multimedia can foster students' learning motivation and independent learning process so that they can improve their learning outcomes. According to the statement by Dewi, Murtinugraha, and Arthur (2018) that interactive learning media can stimulate interest in learning and facilitate understanding of the material for students, there are also significant differences in learning outcomes between students who are taught using interactive learning media and those who are not.

Interactive multimedia learning social science is designed based on problems that occur in everyday life. This interactive multimedia can be integrated with the ARCS learning model. Yulianti, Murdani, & Kusumawati (2019: 25) stated that ARCS is a learning model that prioritizes the management of student motivation during the learning process. Meanwhile, according to Jamil (2019: 8) ARCS model is a problem-solving approach to design aspects of motivation and learning environment in creating and maintaining student motivation to learn.

The ARCS model has a strategy to increase students' motivation and activeness in learning. The strategies are: (1) to increase students' attention to the subject matter; (2) connecting material with everyday life; (3) to increase student's confidence in the material provided by the teacher; (4) to realize student satisfaction in the learning process and the material being studied (Afjar, Musri, dan Syukri, 2020: 2). Multimedia that is integrated with the ARCS model is expected to foster learning motivation and be able to make learning activities varied, stimulate enthusiasm and interest in learning and can arouse curiosity. This will make students active in learning and can increase student motivation.

Research Methods

The research is quasi-experimental study with a nonequivalent control group design. This research was conducted at SMPN 6 Tulang Bawang Barat. The population is all students of class IX. The sample was selected based on the existing classes in the population, obtained with 30 students in class IX-F as the experimental class and 30 students in class IX-G as the control class. The result score data in the form of learning motivation was collected using a learning motivation scale.

The analysis stage in this research are: (1) data analysis before treatment, a prerequisite test was carried out in the form of a data normality test using Kolmogorov-Smirnov and a data homogeneity test was carried out by using the Levene statistic test using SPSS. Furthermore, the average similarity test of the initial score of learning motivation was carried out using the Independent Sample T-Test; (2) analysis of the data after treatment, the prerequisite test was carried out as before. Then, the hypothesis test was carried out using a t-test, namely the Independent Sample T-Test. The hypothesis in this study is the effectiveness of ARCS-based interactive multimedia on learning motivation in social studies learning.

Results and Discussion

Results

The research data was obtained from the score of the learning motivation scale of class IX junior high school students.

Table 1. Distribution of student learning motivation questionnaire results.

	Class	N	Minimum	Maximum	Mean	Std. Deviation
Initial score	Experiment	30	70	97	81,53	7,422
	Control	30	70	98	79,97	7,194
Final score	Experiment	30	100	118	110,17	5,676
	Control	30	86	115	99,77	7,532

Table 1 shows the initial score of students' learning motivation in the two classes, namely 81.53 in the experimental class and 79.97 in the control class, respectively. The initial scores of both classes fall into the category of low learning motivation. The final score of learning motivation in the experimental class was higher than the control class, namely 110,17 for the experimental class and 99.77 for the control class, respectively. The final score of the experimental class in the category of high learning motivation was the control class in the category of moderate learning motivation.

Data Analysis Before Treatment

Analysis Prerequisite Test

The prerequisite test is in the form of a normality test, the initial score of learning motivation is 0.085 in the experimental class and 0.069 in the control class. If the significance value or p is greater than 0.05 then both samples come from a normally distributed population. While the results of the homogeneity test of the overall motivation score were $0.645 > 0.05$. Thus the data comes from a population that has the same or homogeneous variance.

Similarity Test Average Initial Score of Learning Motivation

The similarity test of the average initial motivation score using the Independent Sample T-Test obtained sig. (2-tailed) of $0.410 > 0.05$, which means that there is no significant difference in the initial score of learning motivation between the experimental and the control classes.

Table 2. Independent Sample T-Test Initial Score of Learning Motivation

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									pper	ower
Learning Motivation	Equal variances assumed	0,214	0,645	0,830	58	0,410	1,567	1,887	-2,211	5,344
	Equal variances not assumed			0,830	57,944	0,410	1,567	1,887	-2,211	5,344

Data Analysis After Treatment

Analysis prerequisite test

The results of the normality test in the experimental class are 0.082 and in the control class are 0.200. So it can be concluded that the data is normally distributed because the significance value is greater than 0.05. While the homogeneity test results obtained a significance value of $0.096 > 0.05$, it can be concluded that the sample comes from a population that has the same variance or is homogeneous.

Hypothesis Test

Testing the effectiveness of ARCS-based interactive multimedia on students' learning motivation was tested with the Independent Sample T-Test with the test results obtained Sig. (2-tailed) $0.000 < 0.05$ and $t_{count} > t_{table}$ which is $5,869 > 2,001$ as shown in table 3. So it can be said that there is a significant effect of ARCS-based interactive multimedia on learning motivation.

Table 3. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									pper	ower
Learning Motivation	Equal variances assumed	2,863	0,096	5,869	58	0,000	10,067	1,715	6,633	13,500
	Equal variances not assumed			5,869	53,624	0,000	10,067	1,715	6,627	13,506

Discussion

Interactive multimedia can foster student learning motivation. Supported by Rinaldi (2020) which shows that youtube, which is an interactive multimedia in learning, is effective in increasing students'

learning motivation. Youtube can increase interest, excitement, and enthusiasm for learning. Students who have high enthusiasm will use multimedia to provide learning that is not available in class. Budiarto & Jazuli (2021) Interactive multimedia helps students understand the material and material concepts, fosters attention, desire, and interest in learning so that it can increase student learning motivation. This has an impact on learning outcomes that are achieved optimally.

The use of interactive multimedia based on ARCS is effective in increasing students' learning motivation supported by opinions Li & Ren (2018: 15) namely multimedia learning based on ARCS motivation can effectively increase learning motivation, improve learning attitudes, and can achieve positive learning effects. Wahyudi et al. (2017: 609) revealed that learning using ARCS-based video tutorials can increase student learning motivation, and student attention in the learning process, develop a relevance to the needs of student, create positive expectations for success, and have satisfaction with the success.

Conclusion

The conclusion of this study is that there is a significant difference in the effectiveness of ARCS-based interactive multimedia on the motivation of class IX junior high school. This multimedia has limitations, namely, it only contains one chapter of social science material. In future research, it is hoped that it will not only be specifically for social science, the use of learning models that are more varied and adapted to learning needs.

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